REMARKS

This Amendment is in response to the Office Action mailed May 22, 2002. In the Office Action, pending claims 17-43 were rejected. Claim 38 was rejected under 35 U.S.C. §112, second paragraph. Claims 33-36 and 39-43 were rejected under 35 U.S.C. §101 for statutory double patenting while claims 17-32, 34-35, 37-38, 40 and 42 were rejected under the judicially created doctrine of obviousness double patenting. Claims 17-18, 20-29 and 37 were rejected under 35 U.S.C. §102(b) and claims 17-32 and 37-38 were rejected under 35 U.S.C. §103(a).

Herein, Applicants have cancelled claims 27, 30-36 and 39-43, revised claims 17, 19, 22 24, 28-29 and 37-38 and added claims 44-74. Applicants respectfully submit that all pending claims are now in condition for allowance.

I. REJECTION UNDER 35 U.S.C. § 112

Claim 38 was rejected under 35 U.S.C. §112, second paragraph, as being indefinite. In response, Applicants acknowledge a typographical error in claim 38 and such claim has been revised. Applicants respectfully request that the §112 rejection be withdrawn.

II. REJECTION UNDER DOUBLE PATENTING

Claims 33-36 and 39-43 were rejected under 35 U.S.C. §101 for statutory double patenting associated with U.S. Patent No. 6,058,429. Applicants respectfully disagree with the rejection because statutory double patenting rejections are only applicable when each and every limitation in the subject claim is set forth in claims of the '429 patent, which is not the case for most of the cited claims. Regardless, Applicants respectfully request that the rejection be withdrawn due to cancellation of claims 33-36 and 39-43 without prejudice.

Claims 17-32, 34-35, 37-38, 40 and 42 were rejected under the judicially created doctrine of double patenting. Applicants respectfully submit that it is alleged that claims 40 and 42 have been mistakenly categorized as being part of the above-identified statutory double patenting rejection as well as an obviousness type double patenting rejection. In response to this rejection, Applicants offer to file a terminal disclaimer to overcome the double patenting rejection once the claims are in condition for allowance.

III. REJECTION UNDER 35 U.S.C. § 102(b)

Claims 17-18, 20-29 and 37 were rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,241,682 issued to Bryant, et al. (Bryant). In order to anticipate a claim under §102(e), Bryant must teach every element of the claim. "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros. v. Union Oil Co. of California, 814 F2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Applicants respectfully traverse the rejection and shall discuss the reasons for traversing the rejection with respect to independent claims 17, 24, 28 and 37 – simply, §102(b) rejections are not applicable to dependent claims if such rejection is not applicable to the independent claim.

In general, Bryant teaches a border node including a network node (NN) interface having routing and functional capability over a first data processing network and an endpoint node (EN) interface having local address capability. As a result, the border node can be part of two networks; namely, a network node within the first network and an endpoint node of a second network.

A prima facie case of anticipation has not been met because Bryant does not describe any mechanism that is capable of generating, storing or even accessing a data structure (or table) including *layer two (L2) addresses and corresponding layer three (L3) addresses* associated with

the destination device prior to transferring information to the destination device. As an embedded router implementation, the switch enables the control of the transfer of information to destination devices and thereby reducing traffic on a router operating in cooperation with the switch, in contrast with the dual network interoperability teachings provided by the border node of Bryant. The limitation is explicitly set forth in pending independent claims 24, 28 and 37.

In addition, a prima facie case of anticipation has not been met because Bryant does not describe any mechanism that determines, using L3 information contained in the packet received by a port of a plurality of ports, which one of the plurality of ports is coupled to a destination device and transfers information contained in the packet to the destination device without use of a routing function. The limitation is generally included in claims 17 and 24.

More specifically, the Office Action states that Bryant teaches such a mechanism (see page 9 of Office Action; col. 3, lines 10-15, 31-32;36-39). Such sections of Bryant describe topological isolation provided by a border node (26), which features two interfaces to enable this node to operate as a network node and an endpoint node (see Figure 1; col. 4, lines 62-65 of Bryant). The network node interface (28) of the border node (26) provides routing and functional capability within a first data processing network (10) while the endpoint node interface (30) provides local address capability. However, the border node of Bryant requires use of a routing function to accomplish any data transfer, unlike the claimed invention being a switch that comprises a mechanism to send information contained within a packet without use of a routing function (or protocol).

In light of the foregoing, Applicants respectfully request the Examiner to withdrawal the outstanding §102(b) rejection. If further discussion would facilitate prosecution of the subject case, the Examiner is respectfully invited to contact the undersigned attorney at the phone number listed below.

IV. REJECTION UNDER 35 U.S.C. § 103(a)

Claims 17-32 and 37-38 were rejected under 35 U.S.C. §103(a) as being unpatentable over Bryant as applied to claims 17, 18, 20-29 and 37, and further in view of U.S. Patent No. 5,636,371 issued to Yu. Neither Bryant nor Yu, alone or in combination, suggest creation of a data structure (or table) having L2 and corresponding L3 addresses within a switch in order to send information to a targeted destination device. This reduces traffic on the router without impacting the current configuration of the routers in the network or the L3 address assignments. Also, neither Bryant nor Yu, alone or in combination, suggest a switch that comprises a mechanism to send information contained within a packet to the destination device without use of a routing function (or protocol). Rather, these references collectively suggest a border node that operates as a router on occasion.

VERSION WITH MARKINGS TO SHOW CHANGES MADE

17. (Amended) A switch comprising:

a plurality of ports; and

a mechanism to determine, using layer three (L3) information contained in a packet received by a source port of the plurality of ports, which one of the plurality of ports is coupled to a destination device and to transfer information contained in the packet to the destination device without use of a routing [protocol] function.

18. The switch of claim 17, wherein the plurality of ports includes (i) a first plurality of ports coupled to a plurality of devices, including the destination device, associated with at least two networks, and (ii) a second plurality of ports coupled to a router.

19. (Amended) The switch of claim 18, wherein both of the at least two networks are virtual local area networks.

20. The switch of claim 18, wherein the mechanism analyzes data transmitted between the router and the destination device.

21. The switch of claim 20, wherein the data is packetized in accordance with an Address Resolution Protocol.

22. (Amended) The switch of claim 17, wherein the mechanism generates a [table] data structure including layer two (L2) addresses and corresponding layer three (L3) addresses associated with the destination device prior to transferring information to the destination device.

23. The switch of claim 18, wherein the destination device includes a server associated with one of the at least two networks.

24. (Amended) A switch comprising:

a plurality of ports adapted for coupling together a plurality of networks and a router; and

a mechanism to (a) analyze information transferred from a source device of a first network to a destination device of a second network, (b) store information identifying a port coupled to the second network, a layer two (L2) address of the destination device and a layer three (L3) address of the destination device corresponding to the L2 address, and (c) using the information to forward data between the plurality of networks.

25. The switch of claim 24, wherein the information is obtained from packets configured in accordance with an Address Resolution Protocol.

26. The switch of claim 24, wherein the mechanism uses the information by (i) determining both the L2 address of the destination device and the port coupled to the second network based on the L3 address of the destination device supplied by the source device, and (ii) setting a destination of packets of the data to the L2 address of the destination device.

27. Cancelled.

28. (Amended) A network comprising:

a destination device of a first network;

a source device of a second network;

a router; and

a switch having a plurality of ports supporting communication to the destination device, the source device and the router, the switch including software to determine, using layer three (L3) information contained in a packet received by a first port coupled to the source device, which one of the plurality of ports is coupled to the destination device, to produce a data structure including layer two (L2) addresses and corresponding layer three (L3) addresses associated with the destination device and to transfer information contained in the packet from the source device to the destination device without use of a routing [protocol] function.

29. (Amended) The network of claim 28, wherein the first network is separate and distinct from the second network and the switch is remotely located from the router.

30. Cancelled.

31. Cancelled.

32. Cancelled.

33. Cancelled.

34. Cancelled.

35. Cancelled.

36. Cancelled.

37. (Amended) For use in transferring data from a first network to a second network via a switch interposed between a router and the first and second networks without assistance by the router, the method comprising:

receiving a data packet by the switch, the data packet originating from a source device associated with the first network and including a layer three (L3) address of a destination device of the second network;

determining the L2 address associated with the L3 address of the destination device through access of one or more data structures within the switch and a port of the switch to which the destination device associated with the L3 address is attached; and

setting a destination address of the data packet to the L2 address.

38. (Amended) The method of claim 37, wherein the first and second networks [remarks] are virtual local area networks.

39. Cancelled.

40. Cancelled.

41. Cancelled.

42. Cancelled.

43. Cancelled.

44. (New) The switch of claim 17, wherein the source port is coupled to a first network.

45. (New) The switch of claim 44, wherein the one of the plurality of ports is coupled to a second network.

46. (New) The switch of claim 45, wherein the first network is a first virtual local area network.

47. (New) The switch of claim 46, wherein the second network is a second virtual local area network different from the first virtual local area network.

48. (New) The switch of claim 17, wherein the usage of routing function is use of a rating protocol.

49. (New) The network of claim 28, wherein the usage of routing function is use of a rating protocol.

50. (New) The method of claim 37, wherein the one or more data structures is a table.

51. (New) The method of claim 37 further comprising sending the data packet to the destination device.

52. (New) Adapted to communicate with a router and a destination device, a switch comprising:

a plurality of ports; and

a mechanism to utilize a data structure including layer two (L2) information and corresponding layer three (L3) information associated with the destination device, the data structure being accessed to determine which one of the plurality of ports is coupled to the

destination device and to send information contained in the packet to the destination device with the L2 information in the packet unchanged in order to reduce traffic on the router.

53. (New) The switch of claim 52, wherein the plurality of ports includes a first plurality of ports adapted for communication with a plurality of devices including the destination device, the first plurality of ports being associated with at least two virtual local area networks.

54. (New) The switch of claim 53, wherein the plurality of ports further includes a second plurality of ports coupled to the router.

55. (New) The switch of claim 52, wherein the mechanism further analyzes data transmitted between the router and the destination device.

56. (New) The switch of claim 55, wherein the data is packetized in accordance with an Address Resolution Protocol.

57. (New) The switch of claim 52 being physically removed from the router.

58. (New) The switch of claim 52, wherein the data structure is a table.

59. (New) Adapted for establishing communications between two networks, a switch comprising:

an input; and

a mechanism to determine, using layer three (L3) information contained in a packet received over the input, how a destination device is coupled to the input and to transfer information contained in the packet to the destination device without use of a routing protocol.

60. (New) The switch of claim 59, wherein the input comprises a plurality of ports including a first plurality of ports being adapted for communication with a plurality of devices including the destination device, the first plurality of ports being associated with at least two virtual local area networks.

61. (New) The switch of claim 59, wherein the mechanism analyzes data transmitted between the router and the destination device.

62. (New) The switch of claim 61, wherein the data is formatted in accordance with an Address Resolution Protocol.

63. (New) The switch of claim 59 being physically removed from the router.

64. (New) Adapted to be in communication with a router and a destination device, a switch comprising:

a data structure configured to contain layer two (L2) addresses and corresponding layer three (L3) addresses associated with multiple destination devices; and

logic to populate the data structure based on information received from the router during initial communications with the destination device and, for communications after the initial communications, to utilize the data structure to obtain an L2 address for the destination device for forwarding incoming information to the destination device without accessing the router.

65. (New) The switch of claim 64, wherein the initial communication includes a query in accordance with an Address Resolution Protocol.

66. (New) The switch of claim 64, wherein the data structure is a table.

67. (New) A switch comprising:

a data structure to store a layer three (L3) address and a layer two (L2) address corresponding to the L3 address associated with a device;

means for forwarding a packet if the L3 address of a destination device of the packet matches an L3 address in the data structure, wherein the switch does not process the packet if the L3 address of the destination device matches the L3 address in the data structure; and

means for communicating the packet to a router if the L3 address of the destination device does not match any L3 address in the data structure.

68. (New) The switch of claim 67, wherein the data structure is a table including L2 address and a corresponding L3 address for each destination device of a first local area network.

69. (New) The switch of claim 68, wherein the packet is sent from a device located in a second local area network different from the first local area network.

70. (New) The switch of claim 69, wherein both the first and second local area networks are virtual local area networks.

71. (New) A method comprising:

storing a layer three (L3) address and a layer two (L2) address corresponding to the L3 address in a data structure of a switch;

forwarding a packet to a destination device with the packet being processed by the switch if an L3 address of the destination device of the packet matches an L3 address in the data structure; and

communicating the packet to a router if the L3 address of the targeted destination device does not match any L3 address in the data structure.

72. (New) The method of claim 71, wherein the string of the L3 address and the corresponding L2 address is in a table contained in the switch.

73. (New) The method of claim 72, wherein prior to forwarding of the packet, the method further comprises receiving the packet from a source device by the switch.

74. (New) The method of claim 73, wherein the source device and the destination device are placed in different virtual local area networks.

CONCLUSION

In view of the amendments and remarks made above, it is respectfully submitted that all pending claims are in condition for allowance, and such action is respectfully solicited.

Respectfully submitted,

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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on: August 22, 2002.

Corrinn R. Reynolds 8/22/02
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